SYPHILIS - 2014

✓DISEASE AND EPIDEMIOLOGY

Clinical Description:

An acute or chronic disease characterized clinically by a primary lesion, a secondary eruption involving skin and mucous membranes, long periods of latency, and late lesions of the skin, bone viscera, the CNS and cardiovascular system.

Primary Syphilis: In the primary stage of syphilis, a painless chancre appears within 14 to 21 days at the site of inoculation. Chancres most frequently occur in the genital, perineal or anal area; however, any part of the body may be infected.

Secondary Syphilis: In the secondary stage, disseminated skin rash and lesions of the mucous membranes are most common. Other manifestations include malaise, lymphadenopathy, mucous patches (elevated patches in the mouth or anus), condylomata lata (syphilitic wart-like lesions generally in the perineal and perirectal areas) and alopecia (patchy hair loss).

Early Latent Syphilis: This stage of infection occurs in the first year of infection, and the patient is entirely free of symptoms.

Late Latent Syphilis: Late latent syphilis is an asymptomatic period occurring greater than 1 year after infection.

Late Syphilis with Clinical Manifestations (including late benign syphilis and cardiovascular syphilis): Clinical manifestations of late syphilis may include inflammatory lesions of the cardiovascular system, (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis) or other tissue. Rarely, other structures (e.g., the upper and lower respiratory tracts, mouth, eye, abdominal organs, reproductive organs, lymph nodes, and skeletal muscle) may be involved. Late syphilis usually becomes clinically manifest only after a period of 15–30 years of untreated infection. If neurologic manifestations of syphilis (e.g., tabes dorsalis, dementia) are present and infection occurred more than 12 months ago, the case should be reported as —late syphilis.

Neurosyphilis: In this stage of syphilis, there infection of the central nervous system with T. pallidum, as evidenced by manifestations including syphilitic meningitis,meningovascular syphilis, optical involvement including interstitial keratitis and uveitis2, general paresis, including dementia, and tabes dorsalis.

Congenital Syphilis: A condition caused by infection in utero with Treponema pallidum. A wide spectrum of severity exists, from inapparent infection to severe cases that are clinically apparent at birth. An infant or child (aged less than 2 years) may have signs such as hepatosplenomegaly, rash, condyloma lata, snuffles, jaundice (nonviral hepatitis), pseudoparalysis, anemia, or edema (nephrotic syndrome and/or malnutrition). An older child may have stigmata (e.g., interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose, rhagades, or Clutton joints).

Syphilis Stillbirth: A fetal death that occurs after a 20-week gestation or in which the fetus weighs greater than 500 g and the mother had untreated or inadequately treated* syphilis at delivery. *Adequate treatment is defined as completion of a penicillin-based regimen, in accordance with CDC treatment guidelines, appropriate for stage of infection, initiated 30 or more days before delivery.

Causative Agent:

Syphilis is caused *Treponema pallidum,* a corkscrew shaped bacteria (spirochete).

Differential Diagnosis:

The differential diagnosis for primary syphilis includes chancroid, granuloma inguinale, trauma to the penis, lymphogranuloma venereum, malignancy or a fixed drug eruption may cause lesions resembling a chancre. The differential diagnosis for secondary syphilis includes pityriasis rosea, which may closely resemble psoriasis, erythema multiforme, or a drug eruption.

Laboratory identification:

- Demonstration of Treponema pallidum in clinical specimens by darkfield microscopy
    - Demonstration of T. pallidum in late lesions by special stains
    - Reactive polymerase chain reaction (PCR) or equivalent direct molecular tests
    - Reactive nontreponemal serologic tests:
- Reactive Venereal Disease Research Laboratory [VDRL] serologic test
- Reactive rapid plasma reagin [RPR] serologic test
- Reactive results with equivalent serologic methods
    - Reactive treponemal serologic tests:
- Reactive fluorescent treponemal antibody absorbed [FTA-ABS] serologic test
- Reactive T. pallidum particle agglutination [TP-PA] serologic test
- Reactive treponemal enzyme immunoassay (EIA) serologic test
- Reactive treponemal chemiluminescence immunoassay (CIA) serologic test

- Reactive results with equivalent serologic methods
    - Reactive Venereal Disease Research Laboratory [VDRL] in a specimen of cerebrospinal fluid
- In addition, other laboratory test results associated with congenital syphilis:
    - Demonstration of T. pallidum in lesions, body fluids, or neonatal discharge by darkfield
- microscopy
    - Demonstration of T. pallidum by polymerase chain reaction (PCR) or other equivalent direct
- molecular methods of lesions, neonatal nasal discharge, placenta, umbilical cord, or autopsy
- material
    - Demonstration of T. pallidum by immunohistochemistry (IHC), or special stains (e.g., silver staining) of specimens from lesions, placenta, umbilical cord, or autopsy material

NOTE: Treponemal and/or nontreponemal tests are often performed to confirm or follow up a reactive serologic test for syphilis. All such confirmatory test results (both reactive and nonreactive) should be reported when available, but their availability should not delay report of an initial reactive serologic test result. All reactive results should be reported regardless of treatment status of the patient.

Treatment:

Penicillin G., administered parenterally, is the preferred drug for all stages of syphilis.

- **Primary, Secondary or Early Latent Syphilis**
  Benzathine penicillin G 2.4 million units IM in a single dose

- **Late Latent Syphilis or Latent**
  Benzathine penicillin G 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1week intervals

- **Neurosyphilis**
  Aqueous crystalline penicillin G 18-24 million units per day, administered as 3-4 million units IV every 4 hours or continuous infusion, for 10-14 days

- **Congential Syphilis**
  Aqueous crystalline penicillin G 100,000-150,000 units/kg/day, administered as 500,000 units/kg/dose IV every 12 hours during the first 7 days of life and every 8 hours thereafter for a total of 10 days

  OR

  Procaine penicillin G 50,000 units/kg/dose IM in a single daily dose for 10 days

For additional treatment options and alternatives, please go to www.cdc.gov/std/treatment for the Sexually Transmitted Disease Treatment Guidelines, 2010

Case fatality:
Up to 20% of untreated cases die from this disease. Untreated early syphilis in pregnant women results in perinatal death in up to 40% of cases.

Reservoir:
Humans are the only known natural hosts.

Transmission:
Syphilis is transmitted by direct contact with a syphilis sore during vaginal, anal or oral sex. Transmission may also occur across the placenta prior to birth. Transmission rarely occurs by blood transfusion.

Susceptibility:
Susceptibility is universal, though only approximately 30% of exposures result in infection.

Incubation period:
The incubation period of primary syphilis is 9-90 days – median 21 days. The incubation period is 3-12 months for secondary syphilis.

Period of communicability:
Patients are most infectious during the primary and secondary stages of syphilis when lesions or rash are present.

Epidemiology:
Syphilis, which is rare in much of the industrialized world, persists in the United States and developing countries. In 2005, primary and secondary cases reported increased for the fifth consecutive year. Although the rate of syphilis infection increased mostly among men, the rate also increased among women. The incidence of acquired and congenital syphilis increased dramatically in the United States during the late 180s and early 1990s but subsequently declined in all areas, but the rates remain disproportionately high in urban areas and the rural areas of the South. Overall increases in rates during 2000-2004 were observed only among men.

✓PUBLIC HEALTH CONTROL MEASURES

Public health responsibility:

- Investigate all suspect cases of disease and fill out and submit appropriate disease investigation forms.
- Provide education to the general public and clinicians, regarding disease transmission and prevention.
- Identify clusters or outbreaks of this disease.
- Identify sources of exposure and stop further transmission.

Prevention:

Emphasis should be placed on early detection and effective treatment of patients with transmissible syphilis and their contacts.

- Educate the community in general health promotion measures;
  - Provide health and sex instruction that teaches the value of delaying sexual activity until the onset of sexual maturity as well as the importance of establishing mutually monogamous relationships and reducing the numbers of sexual partners;
- Protect the community and controlling STDs in sex workers and their clients;
  - Discourage multiple sexual partners and anonymous or casual sexual activity;
  - Teach methods of personal prophylaxis applicable before, during and after exposure, especially the correct and consistent use of condoms.
- Provide health care facilities for early diagnosis and treatment;
  - Encourage their use through education of the public about symptoms of sexually transmitted infections and modes of spread;
  - Make these services culturally appropriate and readily accessible, and acceptable, regardless of economic status;
  - Establish intensive case-finding programs that include interviewing patients and partner notification;
  - Repeated serological screening within special populations with known high incidence of STDs.
  - Follow cases serologically to exclude other STD infections such as HIV.

Chemoprophylaxis:

All sexual partners should receive prophylaxis.

Vaccine:

None

Isolation and quarantine requirements:

Isolation: Avoid sexual contact until treatment is completed

Hospital: Standard body substance precautions
Quarantine: Not applicable

✓CASE INVESTIGATION

Reporting:

All cases of syphilis are reportable, even asymptomatic (latent) syphilis. Syphilis is a complex sexually transmitted disease that has a highly variable clinical course. Adherence to the following surveillance case definitions will facilitate understanding the epidemiology of this disease across the U.S.

Criteria to determine whether a case should be reported to public health authorities:

Criterion	Syphilis of Any Stage
Clinical presentation	
Ulcerative lesion (e.g. chancre)	C
Localized or diffuse mucocutaneous lesions (non-pruritic macular, maculopapular, papular or pustular lesions), generalized lymphadenopathy, mucous patches, condyloma lata, alopecia	C
Evidence of congenital syphilis on physical examination	C
Evidence of congenital syphilis on radiographs of long bones	C
Syphilitic lesions of the cardiovascular system, skin, bone or other tissue	C
Neurologic manifestations, clinical symptoms or signs consistent with neurosyphilis without other known causes	C
Any death certificate that lists syphilis as a cause of death or a significant condition contributing to death.	S
Laboratory Findings	
Demonstration of *Treponema pallidum* in clinical specimens by darkfield microscopy	S
Demonstration of *T. pallidum* in late lesions by special stains	S
Reactive polymerase chain reaction test (PCR) or equivalent direct molecular methods	S
Reactive non-treponemal serologic test (Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods)	S
Reactive treponemal serologic test (fluorescent treponemal antibody absorbed [FTA-ABS], *T. pallidum* particle agglutination [TP-PA]), enzyme immunoassay	S

[EIA], chemiluminescence immunoassay [CIA], or equivalent serologic methods)	
Reactive Venereal Disease Research Laboratory [VDRL] test in a specimen of cerebrospinal fluid	S
Reactive fluorescent treponemal antibody absorbed – 19S-IgM antibody test or IgM enzyme-linked immunosorbent assay in an infant	S
An elevated CSF protein or CSF leukocyte count in the absence of other known causes	C
Epidemiological Risk Factors	
An infant whose mother had untreated or inadequately treated syphilis at delivery, regardless of signs in the infant. (Inadequate treatment consists of any non-penicillin therapy or penicillin given less than 30 days before delivery.)	S

Notes:
S = This criterion alone is Sufficient to report a case.
C = This finding corroborates (i.e., supports) the diagnosis of—or is associated with—syphilis, but is not required for reporting.

Case definition:

Syphilis (2014):

Epidemiologists classify infections according to the following:

Criteria for defining a case of syphilis

	Case Definition											
	Confirmed					Probable						
								Latent				
Criterion	1	2	Neuro*	Late	Cong	1	2	E	L	Neuro*	Late	Cong
Clinical presentation												
Ulcerative lesion (e.g. chancre)	N	C				N	C	A	A			
Localized or diffuse mucocutaneous lesions (non-pruritic macular, maculopapular, papular or pustular lesions), generalized lymphadenopathy, mucous patches, condyloma lata, alopecia (at least one of these is required)		N					N	A	A			

Syphilitic inflammatory lesions of the cardiovascular system, (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis) or other tissue or structure				O				A	A		O	
Clinical symptoms or signs consistent with neurosyphilis without other known causes for these clinical abnormalities								A	A	N		
Neurologic manifestations of syphilis (e.g., tabes dorsalis, dementia) are present and infection occurred more than 12 months ago				O						O	O	
Evidence of congenital syphilis on physical examination (see signs and stigmata, based upon age, detailed below)												O
An infant or child (aged less than 2 years) with signs such as hepatosplenomegaly, rash, condyloma lata, snuffles, jaundice (nonviral hepatitis), pseudoparalysis, anemia, or edema (nephrotic syndrome and/or malnutrition).					C							O
A child with stigmata of congenital syphilis (e.g., interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose, rhagades, or Clutton joints					C							O
Evidence of congenital syphilis on radiographs of long bones (e.g., metaphyseal and epiphyseal changes)												O
Laboratory Findings												

Demonstration of *Treponema pallidum* in clinical specimens by darkfield microscopy	O	O				A	A					
Reactive polymerase chain reaction test (PCR) or equivalent direct molecular methods	O	O		O		A	A				A	
Reactive non-treponemal serologic test (Venereal Disease Research Laboratory [VDRL], rapid plasma regain [RPR], or equivalent serologic methods)			O			O		N	N	O		
Reactive Venereal Disease Research Laboratory [VDRL], rapid plasma regain [RPR], or equivalent serologic test with a titer ≥4							N					
Reactive Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic test demonstrating a fourfold or greater increase in titer								O[1]	O[1]			
Reactive Venereal Disease Research Laboratory [VDRL] test in a specimen of cerebrospinal fluid			N							A		O
Reactive treponemal serologic test (fluorescent treponemal antibody absorbed [FTA-ABS], T. pallidum particle agglutination [TP-PA]), enzyme immunoassay [EIA],chemiluminescence immunoassay [CIA], or equivalent serologic methods)			O			O	N	N	N	O	N	N
Elevated CSF protein or CSF leukocyte count in absence of other known cause										N		O
Demonstration of *T. pallidum* in late lesions by special stains				O							A	
Demonstration of Treponema pallidum by darkfield microscopy,					N							A

fluorescent antibody , or other specific stains in specimens from lesions, placenta, umbilical cord, or autopsy material												
Reactive fluorescent treponemal antibody absorbed –19S-IgM antibody test or IgM enzyme-linked immunosorbent assay												O
Epidemiological Risk Factors												
An infant whose mother had untreated or inadequately treated syphilis at delivery, regardless of signs in the infant. (Inadequate treatment consists of any non-penicillin therapy or penicillin given less than 30 days before delivery.)												O
A fetal death that occurs after a 20-week gestation or in which the fetus weighs greater than 500 g and the mother had untreated or inadequately treated syphilis at delivery. (Inadequate treatment consists of any non-penicillin therapy or penicillin given less than 30 days before delivery.)												O
Criteria for assessing the stage of latent syphilis												
No history of syphilis diagnosis								O	O			
Past history of syphilis therapy								O[1]	O[1]			
History of symptoms consistent with primary or secondary syphilis within the previous 12 months								O	A			
History of sexual exposure to a partner who had confirmed or probable primary or secondary syphilis or probable early latent syphilis (documented independently as								O	A			

duration less than 12 months)												
Seroconversion or fourfold or greater increase in titer of a nontreponemal test during the previous 12 months								O	A			
Documented seroconversion of a treponemal test during the previous 12 months								O	A			
Only sexual contact was within the last 12 months (sexual debut)								O	A			

Notes:
***When reporting neurosyphilis to CDC, the case should be reported as the stage of infection with "neurologic manifestations present" noted in the case report data.**
N = This criterion in conjunction with all other "N" and any "O" criteria in the same column is
required to classify a case.
O = At least one of these "O" criteria in each category in the same column (e.g., clinical presentation and laboratory findings)—in conjunction with all other "N" criteria in the same
column—is required to classify a case.
A = This criterion must be absent (i.e., NOT present) for the case to meet the case definition.
C = This finding corroborates (i.e., supports) the diagnosis of—or is associated with—syphilis,
but is not included in the case definition.
[1]If there is a history of past therapy for syphilis, a fourfold increase in nontreponemal titer must be present

Syphilis, primary

Clinical description

A stage of infection with *Treponema pallidum* characterized by one or more chancres (e.g. chancre or ulcers); chancres might differ considerably in clinical appearance.

Laboratory criteria for diagnosis

Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, direct fluorescent antibody (DFA-TP), or equivalent methods.

Case classification

Probable: a case that meets the clinical description of primary syphilis with a reactive serologic test (nontreponemal: Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods; treponemal: fluorescent treponemal antibody absorbed [FTA-ABS], *T. pallidum* particle agglutination [TP-PA], enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA], or equivalent serologic methods)[1].

Confirmed: a clinically compatible case that is laboratory confirmed

Syphilis, secondary

Clinical description

A stage of infection caused by *T. pallidum* characterized by localized or diffuse mucocutaneous lesions (e.g., rash — such as non-pruritic macular, maculopapular, papular, or pustular lesions), often with generalized lymphadenopathy. Other symptoms can include mucous patches, condyloma lata, and alopecia. The primary ulcerative lesion may still be present. Because of the wide array of symptoms possibly indicating secondary syphilis, serologic tests for syphilis and a thorough sexual history and physical examination are crucial to determining if a case should be classified as secondary syphilis.

Laboratory criteria for diagnosis

Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, or by polymerase chain reaction (PCR) or equivalent direct molecular methods

Case classification

Probable: a case that meets the clinical description of secondary syphilis with a nontreponemal (VDRL, RPR, or equivalent serologic methods) titer ≥4 AND a reactive treponemal test (FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods.

Confirmed: a case that meets the clinical description of secondary syphilis (with at least one sign or symptom) that is laboratory confirmed

Syphilis, early latent

Clinical description

A subcategory of latent syphilis (a stage of infection caused by *T. pallidum* in which organisms persist in the body of the infected person without causing symptoms or signs) when initial infection has occurred within the previous 12 months.

[1]These treponemal tests supersede older testing technologies, including microhemagglutination assay for antibody to *T. pallidum* [MHA-TP].

Case classification
Probable: A person with no clinical signs or symptoms of syphilis who has one of the following:

- No past diagnosis of syphilis, AND a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods), AND a reactive treponemal test (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods), **OR**
- A current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer.
- **AND** evidence of having acquired the infection within the previous 12 months based on one or more of the following criteria:
    - Documented seroconversion or fourfold or greater increase in titer of a nontreponemal test during the previous 12 months
    - Documented seroconversion of a treponemal test during the previous 12 months
    - A history of symptoms consistent with primary or secondary syphilis during the previous 12 months
    - A history of sexual exposure to a partner within the previous 12 months who had primary, secondary, or early latent syphilis (documented independently as duration < 12 months)
    - Only sexual contact was within the last 12 months (sexual debut)

Confirmed: There is no confirmed case classification for early latent syphilis.

Syphilis, late latent

Clinical description
A subcategory of latent syphilis (a stage of infection caused by *T. pallidum* in which organisms persist in the body of the infected person without causing symptoms or signs) when initial infection has occurred >12 months previously.

Case classification
Probable: A person with no clinical signs or symptoms of syphilis who has one of the following:

- No past diagnosis of syphilis, AND a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods), AND a reactive treponemal test (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods), **OR**
- A past history of syphilis therapy and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer

- **AND** who has no evidence of having acquired the disease within the preceding 12 months (see Syphilis, early latent).

Confirmed: There is no confirmed case definition for late latent syphilis.

Syphilis, late, with clinical manifestations (including late benign syphilis and cardiovascular syphilis)

Clinical description

Clinical manifestations of late syphilis may include inflammatory lesions of the cardiovascular system, (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis) or other tissue. Rarely, other structures (e.g., the upper and lower respiratory tracts, mouth, eye, abdominal organs, reproductive organs, lymph nodes, and skeletal muscle) may be involved. Late syphilis usually becomes clinically manifest only after a period of 15–30 years of untreated infection. If only neurologic manifestations of syphilis (e.g., tabes dorsalis, dementia) are present and infection occurred more than 12 months ago, the case should be reported as “late syphilis”.

Laboratory criteria for diagnosis

Demonstration of *T. pallidum* in late lesions by special stains (although organisms are rarely visualized in late lesions), or equivalent methods, or by polymerase chain reaction (PCR) or equivalent direct molecular methods.

Case classification

Probable: characteristic abnormalities or lesions of the cardiovascular system (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis), or other tissue AND a reactive treponemal test (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods), in the absence of other known causes of these abnormalities. CSF abnormalities and clinical symptoms or signs consistent with neurologic manifestations of syphilis might be present.

Confirmed: a case that meets the clinical description of late syphilis that is laboratory confirmed.

Neurosyphilis

Clinical description

Evidence of central nervous system infection with *T. pallidum.*

Laboratory criteria for diagnosis

A reactive serologic test for syphilis and reactive VDRL in cerebrospinal fluid (CSF).

Case classification

Probable: syphilis of any stage, a negative VDRL in CSF, and both the following:

- Elevated CSF protein or leukocyte count in the absence of other known causes of these abnormalities;
- Clinical symptoms or signs consistent with neurosyphilis without other known causes for these clinical abnormalities.

Confirmed: syphilis of any stage that meets the laboratory criteria for neurosyphilis.

Syphilitic Stillbirth

Clinical case definition

A fetal death that occurs after a 20-week gestation or in which the fetus weighs greater than 500 g and the mother had untreated or inadequately treated* syphilis at delivery

Comment

For reporting purposes, syphilitic stillbirths should be reported as cases of congenital syphilis.

*Inadequate treatment consists of any non-penicillin therapy or penicillin given less than 30 days before delivery.

Syphilis, Congenital

Clinical description

A condition caused by infection in utero with *Treponema pallidum*. A wide spectrum of severity exists, and only severe cases are clinically apparent at birth. An infant or child (aged less than 2 years) may have signs such as hepatosplenomegaly, rash, condyloma lata, snuffles, jaundice (nonviral hepatitis), pseudoparalysis, anemia, or edema (nephrotic syndrome and/or malnutrition). An older child may have stigmata (e.g., interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose, rhagades, or Clutton joints).

Laboratory criteria for diagnosis

Demonstration of *Treponema pallidum* by darkfield microscopy, fluorescent antibody, or other specific stains in specimens from lesions, placenta, umbilical cord, or autopsy material.

Case classification

Probable: a condition affecting an infant whose mother had untreated or inadequately treated* syphilis at delivery, regardless of signs in the infant, OR an infant or child who has a reactive treponemal test for syphilis AND any one of the following:

- Any evidence of congenital syphilis on physical examination
- Any evidence of congenital syphilis on radiographs of long bones
- A reactive Venereal Disease Research Laboratory (VDRL) test in a specimen of CSF
- An elevated CSF protein or CSF leukocyte count (without other cause)
- A reactive fluorescent treponemal antibody absorbed--19S-IgM antibody test or IgM enzyme-linked immunosorbent assay

Confirmed: a case that is laboratory confirmed

Comment:
Congenital and acquired syphilis may be difficult to distinguish when a child is seropositive after infancy. Signs of congenital syphilis may not be obvious, and stigmata may not yet have developed. Abnormal values for CSF VDRL, cell count, and protein, as well as IgM antibodies, may be found in either congenital or acquired syphilis. Findings on radiographs of long bones may help because radiographic changes in the metaphysis and epiphysis are considered classic signs of congenitally acquired syphilis. The decision may ultimately be based on maternal history and clinical judgment. In a young child, the possibility of sexual abuse should be considered as a cause of acquired rather than congenital syphilis, depending on the clinical picture. For reporting purposes, congenital syphilis includes cases of congenitally acquired syphilis among infants and children as well as syphilitic stillbirths.

Case Investigation Process:

- Fill out a morbidity form
- Conduct a Client Interview
- Fill out a client interview record on original patient and field records for contacts and suspects identified
- Conduct field investigations on contacts and suspects
- Treatment and follow-up for contacts
- Re-interview client for additional contacts and suspects
- Complete interview record

Outbreaks:

A syphilis outbreak occurs when the observed rate of disease in a geographical area exceeds the normal (endemic) rate.

Identification of case contacts:

The stage of disease determines the criteria for partner notification:

- For primary syphilis, all sexual contacts during the 3 months preceding onset of symptoms.

- For secondary syphilis, all sexual contacts during the 6 months preceding onset of symptoms.
- For early latent syphilis, all sexual contacts of the preceding year, if time of primary and secondary cannot be established.
- For late and late latent syphilis, long-term partners, and children of infected mothers.
- For congenital syphilis, all members of the immediate family.
    - If adequate and appropriate treatment of the mother prior to the last month of pregnancy cannot be established, all infants born to seroactive mothers should be treated.

Case contact management:

A fundamental feature of programs for syphilis control is the interviewing of patients to identify sexual contacts from whom infection was acquired in addition to those whom the patient infected.

- All sexual partners of confirmed cases of primary syphilis during the 3 months preceding onset of symptoms should be examined, tested, and treated.
- All sexual partners of confirmed cases of secondary syphilis during the 6 months preceding onset of symptoms should be examined, tested, and treated
- For early latent syphilis, all sexual contacts of the preceding year, if time of primary and secondary cannot be established should be examined and tested. All cases of confirmed cases of early syphilis exposed within 90 days of examination should receive treatment.
- For late and late latent syphilis, long-term partners, and children of infected mothers should be examined and tested.
- For congenital syphilis, all members of the immediate family should be examined and tested. If adequate and appropriate treatment of the mother prior to the last month of pregnancy cannot be established, all infants born to seroactive mothers should be treated.
- All patients who have syphilis should be tested for HIV.

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